

****ATTENTION****

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STATE OF WASHINGTON

DEPARTMENT OF WILDLIFE

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Controlling Beaver Damage

The beaver is North America's largest rodent, sometimes attaining a weight of over seventy pounds. With it's wide, flat tail and orange front teeth, it is unmistakable. Virtually, every body of water in Washington contains one or more of these beneficial animals. The ponds they create with their dams serve as homes to many species of fish and wildlife. These year around ponds also help to prevent flooding, maintain water tables, slow down topsoil erosion, and provide summer watering areas for livestock and wildlife.

Occasionally, beavers do come into conflict with landowners, either by flooding property or cutting down valuable trees. Although beavers are persistent, there are some methods that have proven effective in discouraging them.

Flooding

Established beaver ponds are protected by hydraulics laws in the state of Washington and permits must be obtained from a Department of Wildlife regional office before any work is done in state waters. As many farmers have found out the hard way, beavers can replace a dam almost as fast as the landowner can tear it out. One method that has proven effective is to remove a three foot wide slot from the dam with a potato rake. After the water has dropped to the acceptable level, hang an old shirt that a dog had been sleeping on, over the hole in the dam. You will want the bottom of the shirt to just be touching the surface of the water. Some people have found that hanging a bar of "Irish Spring" soap over the water has the same effect. This technique also works on culverts that the beaver have been plugging. Although, this method may not be a permanent solution, it often will discourage the beaver until the trapping season opens in November.

Occasionally, it happens that as fast as you have beavers removed from your property, new beavers take their place. This is especially true if you live on a small creek which drains into a large body of water with a healthy beaver population in it. In this case a culvert will probably have to be placed in the dam. This culvert can be made from either heavy wire mesh or perforated plastic pipe. Directions for building one of these culverts is available upon request from the Department of Wildlife.

Cutting Trees

One morning you may look out your back window and find that the weeping willow you planted by the creek is no longer there. Closer inspection reveals that all that is left is a foot high stump, gnawed to a point. As you walk along the creek you'll probably notice pieces of the willow chewed into convenient lengths for transporting. You, like thousands of other people that bought waterfront property, have just had your first encounter with a beaver. There are two basic methods which have proven effective for this kind of damage. The first method is to paint all valuable trees that are growing near the water with automobile undercoating. This paint can be purchased at any auto parts store. Paint the tree trunk to a height of three feet. Another longer lasting method, is to surround the tree trunk with several wraps of wire fencing, preferably one inch mesh or less. It must be at least three feet high and wired firmly in place. Don't forget to leave room for some growth and plan on loosening the wire every few years.

Alternatives

If the landowner decides that he just can't live with the beavers there are ways to remove them. If the beavers are causing damage they can be destroyed by the landowner as long as he notifies the Department of Wildlife regional office first: Beavers are usually nocturnal, so shooting seldom works. Traps are effective but can be quite costly and require some level of skill to use properly. Therefore most landowners wait until the winter trapping season and have a licensed trapper come in to remove the beaver. Since the pelt is of some value at that time of year, the trapper usually removes them for free. If you don't know any trappers, the Department of Wildlife regional office should be able to help you contact several in your area.

If you feel you can't wait until winter, there are now licensed Wildlife Contractors in most counties that can remove beavers, dead or alive, for a fee. Their names and phone numbers are available from Department of Wildlife regional offices.

A WIRE MESH CULVERT FOR USE IN CONTROLLING WATER LEVELS AT NUISANCE BEAVER SITES

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Trial testing of corrugated plastic drainage tubing and wire mesh culverts has been conducted since 1978 in Region 9 of the New York State Department of Environmental Conservation. Plastic tubing was successfully used in streams with drainages less than 1 square mile. However, in drainages larger than 1 square mile or where longer than 10-inch diameter tubing was required, 19-inch diameter wire mesh culverts were tried. By 1983 more than 11 wire mesh culverts had been installed successfully in the Region.

The culverts were constructed from No. 6 gauge concrete reinforcing mesh panels 10 feet by 5 feet. Galvanized welded wire mesh, No. 14 gauge with 1 inch by 2 inch spacing and 5 feet in width, was cut in 9 feet 6 inch lengths and fastened to the panels with No. 1 hog rings. The covered panel was then bent into a cylinder and the seam secured with No. 3 hog rings. The resulting 9 feet 6 inch culvert sections were assembled and stored prior to their use at beaver nuisance sites. Figures 1 through 4 show the methods used in constructing culvert sections.

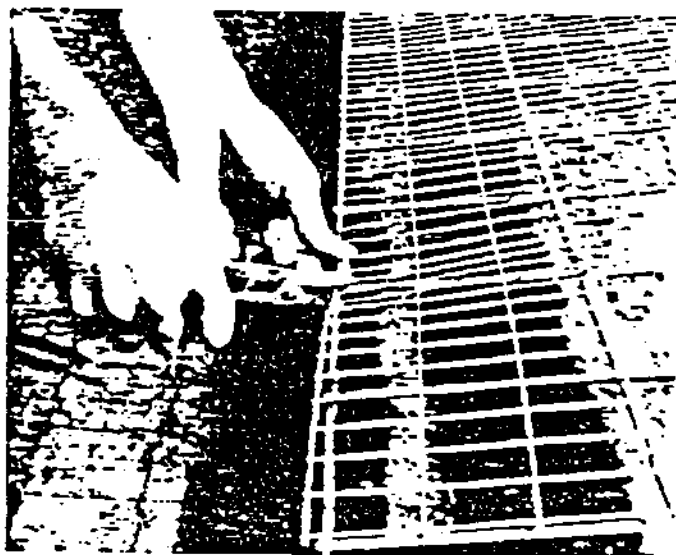


Figure 1. Fastening galvanized wire mesh to No. 6 gauge, 6 inch by 6 inch, concrete reinforcing mesh with No. 1 hog rings.

Culvert sections were transported to nuisance beaver sites and then connected to form the needed culvert lengths. Figure 5 shows the method used in connecting the culvert sections. The inlet end of a completed culvert length was covered with 6 inch by 6 inch or smaller spaced wire mesh to exclude beavers.



Figure 2. Bending wire mesh panel to connect the seam.



Figure 3. Fastening the seam with No. 3 hog rings.

Culverts were installed at nuisance sites in the same manner as plastic tubing. As with tubing, a minimum of 3 feet of water depth was required at the site under the culvert length. If 3 feet of depth was not available, a pit 4 feet or more in depth and 8 feet in width was excavated under the entire culvert length before the culvert was installed. Three culvert sections or 28 1/2 feet of culvert were frequently used at nuisance sites and considered a minimum length for use. Shorter lengths were installed where excavation could be done under the culvert frequently or where water depth was 5 feet or more. In general, the shallower the water depth under the culvert, the longer the culvert needed to provide adequate water level control.

When a culvert was installed in a beaver dam, a notch was removed from the dam and the outlet end was placed at the desired water level. The outlet end was



Figure 4. Forming wire mesh into a cylinder by placing the seam down and forcing downward on the top.

extended 5 feet over the crest of the dam to prevent beavers from damming below it. The remaining length of the culvert extended into the beaver pond and was supported at the water surface by metal posts or 2 inch steel pipe. The inlet end was placed slightly lower than the outlet to keep rapid flow in the pipe near the dam. This appeared to discourage beavers from damming along the entire culvert length. Figure 6 shows a wire culvert in place in a beaver dam.

Wire culverts were also used to protect road culverts from being plugged by beavers. Wire culverts were installed at road culverts in the same manner as they were in beaver dams except that the outlet end was placed directly into the road culvert. Any remaining opening was covered with 6 inch by 6 inch concrete reinforcing mesh, to exclude beavers.

Wire culverts required maintenance to keep them operating properly. Maintenance included: 1 or more inspections of the culverts annually, the removal of beaver plugging debris, and the replacement of the galvanized wire covering which has a useful life of only 3 years. If a large amount of debris had been placed around a culvert by beavers, the culvert was removed and repositioned in the dam away from the



Figure 5. Wire culvert sections are joined together at the nuisance site by interlacing 3 inch No. 6 gauge end wires that protrude from section ends.

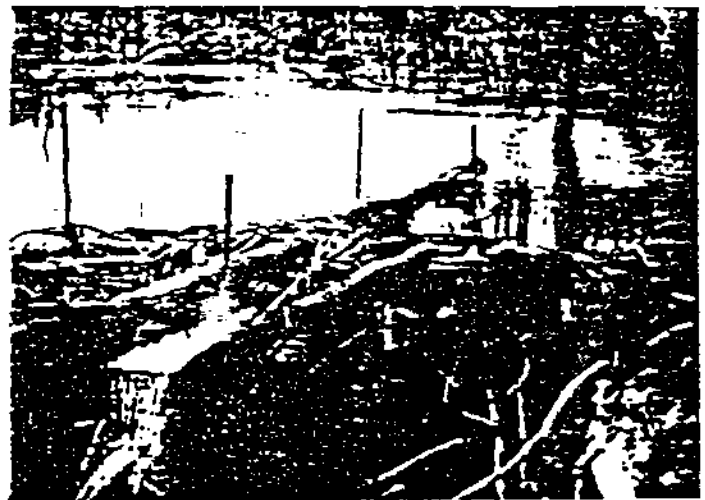


Figure 6. A wire culvert in place in a beaver dam, showing the proper extension of the culvert outlet from the crest of the dam and the placement of the inlet at the water surface.

debris. At a road culvert, the wire culvert was removed and the area under it was excavated.

The cost of materials for a wire culvert section at 1980 prices was approximately \$20.00. The frequently used 3 section culvert requiring three 6-foot support posts cost approximately \$75.00 for materials. Construction and installation of this culvert length required 2 people working one 8 hour day, or 2 worker-days of time.



Figure 7. Debris placed by beavers around a wire culvert installed in an improper horizontal position. Beaver plugging activity was discouraged when culverts were installed instead with the inlet end slightly lower than the outlet end.